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The breakthrough of ragtime. A phenomenological investigation of Conlon Nancarrow's Study 40a for player piano.

Erik Christensen and Lise Christensen Bjerno. Authors' manuscript.

Conlon Nancarrow (1912-1997) was an American-Mexican composer, born in Arkansas, USA, Mexican citizen since 1956. After studying music in the United States, he participated in the Spanish Civil War as a member of the Abraham Lincoln Brigade, fighting against the Francisco Franco troops. He returned to the U.S. in 1939, but moved to Mexico City in 1940 in order to escape persecution of socialists. In 1947, Nancarrow began composing for the mechanical Player Piano, completing a large number of Studies for this instrument. His compositions received little attention until 1976-77, when U.S. scholars and composers began publishing scores by Nancarrow and releasing recordings of his Studies for Player Piano.

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Abstract

The paper presents a phenomenological investigation of Conlon Nancarrow's Study 40 a for player piano, employing the method of experimental listening developed by the authors. This method is based on approaches from the music phenomenology of Don Ihde, Thomas Clifton and Lawrence Ferrara. In experimental listening, two people listen multiple times to a piece of music, guided by deliberately varied focus on listening, and describe their observations and reflections after each listening. We explain the method and its background, report our observations and reflections, and discuss our findings briefly in relation to an analysis of the notated score.

Keywords: Nancarrow, player piano, phenomenology, hermeneutics, music listening, musical time, musical space

Background[1]

Phenomenology is a means of discovering unnoticed aspects of the world. Phenomenological inquiry uncovers the richness and complexity of sensory experience and provokes the sense of wonder. For the phenomenological investigation of music, listening is the primary source.

[1] This paragraph presents a summary of the Chapter "Music Phenomenology: A Tool for Describing the Listening Experience" in Christensen (2012), available online at https://www.mt-phd.aau.dk/phd-theses/

The present investigation employs a method of experimental phenomenological listening, developed by the authors (2012). In experimental listening, two people listen systematically to a short piece of music numerous times, describing their observations and reflections after each listening.

Phenomenology investigates the first-person experience of the world. Central sources for the phenomenological inquiry of music are the writings of Don Ihde, Thomas Clifton and Lawrence Ferrara, three scholars who, in very different manners, have yielded important contributions to music phenomenology. These scholars have developed their phenomenological concepts on the basis of the philosophies of Edmund Husserl, Martin Heidegger and Maurice Merleau-Ponty.

Phenomenology is not a finished system, but an evolving practice, aimed at integrating focused observations with reflections on the nature of sensory experience. Phenomenology is not based on introspection. The investigating consciousness is open to the world, directed toward the world's objects and manifestations, fundamentally connected with the body's presence in the world and the body-based sensations of the world (Clifton 1983, Ihde 1976, Merleau-Ponty 2002).

Don Ihde presented a strategy for establishing a phenomenology of listening in his groundbreaking book *Listening and Voice. A Phenomenology of Sound* (1976). He states that the aim of phenomenology is to recover and appreciate the fullness and richness and complexity of sensory experience. In order to approach this goal, the music listener can ask multiple questions to the musical experience in a succession of repeated listenings, thus varying the focus of conscious attention. This procedure constitutes a sequence of phenomenological variations, which aim at providing a wealth of observations and reflections.

Ihde describes a first phenomenology based on Husserl and a second phenomenology based on Heidegger. First phenomenology is a phenomenology of presence, aiming at grasping "the things themselves" (Husserl 1901, p. 7) by getting rid of personal everyday beliefs and presuppositions, focusing on describing unnoticed aspects and structures of the musical flow. In this process, intersubjective comparison and verification are important. Second phenomenology aims at interpreting the observations of first phenomenology in an existential and cultural context, following Heidegger who states that "the meaning of phenomenological description as a method lies in interpretation" (Heidegger 1962, p. 61).

Ihde discusses the experience of time in music with reference to Husserl's philosophy of time-consciousness. When we perceive events in the world, we do not perceive each event as an isolated "now", but as part of a continuation within a field of presence. We hear a melody as a continuity, where each tone is connected to the previous tones, and connected to the succeeding tones. Husserl describes the consciousness of the just-past as *retention,* and the conscious expectancy of the upcoming future as *protention.* The field of presence is a continuum which is constantly modified, as each "now" is changed into a past (Husserl 1964). The attentive listener can deliberately vary his temporal focus, choosing a narrow, fine or broad focus by concentrating on a single exact event, a confined temporal evolution, or a larger span of temporal awareness.

Thomas Clifton presented his own strategy for establishing a music phenomenology in his article "Music as constituted object" (1976) and his book *Music as Heard. A Study in Applied Phenomenology,* published 1983, five years after the author's untimely death.

It is Clifton's point of departure that the reality of music is constituted by the listener's sensory experience, based on actions of the body directed towards the music. Following Merleau-Ponty (2002), Clifton states that perception is a body-based experience that integrates auditory, visual and tactile qualities.

While everyday music listening may often imply passive reception, phenomenological listening is an ongoing active process that aims at revealing possibilities. Clifton demonstrates this approach in a phenomenological description of Anton Webern's *Bagatelle for String Quartet* op. 9 no. 1. The focus of the listener's intentions may be "a possession, a concern, a project, a relation, a form, or a problem" (Clifton 1976, p. 74).

Clifton's pioneering book *Music as Heard* presents a considerable number of phenomenological descriptions and analyses of music from several centuries, from Gregorian chant to Bartok, Berg, and Ligeti. Clifton states that a listener can experience any succession of sounds as music, if he decides to do so. Consequently, he attaches special importance to the sensory qualities that characterize all kinds of sounds, including timbre, gesture, dynamics, texture and duration. Clifton proposes that the phenomenological investigation of music encompasses time, space, motion, form, tone quality and feeling. Furthermore, he emphasizes that true music listening requires total attention and engagement, implying perceiving, interpreting, judging and feeling.

Clifton adopts Husserl's description of time-consciousness as a field of presence that comprises retention, "now" and protention. Moreover, he underlines that the experience of time arises from the perception of motion and change. Music listening evokes multiple experiences of motion and change, such as beginning and end, continuity and interruption, acceleration and deceleration, expansion and contraction.

In accordance with Merleau-Ponty's philosophy of perception (2002), Clifton states that music listening evokes the experience of spatial qualities, such as high and low, far and near, behind and in front of. In his descriptions, he visualizes the musical space as a three-dimensional space which encompasses lines, surfaces, textures, sound masses, and depth. He considers musical space and musical movement as inseparable. Motion in music is significant, because it is related to activities known by the body, including gesture, ascending and descending, movement toward or away, rest and tension.

Lawrence Ferrara's article "Phenomenology as a Tool for Musical Analysis" (1984) introduced a procedure that constitutes a useful model for systematic phenomenological investigation of music. He proposed a straightforward procedure for repeated listening, alternating between open listening, listening for the sound as such, and listening for the meaning of the sound.

Open listening means listening without guidelines or questions, followed by a reflective description. Listening for the sound as such focuses on attentive and detailed description of the musical sounds and their connections, corresponding to Don Ihde's first phenomenology. Listening for meaning implies searching for appropriate interpretations of the musical sounds, corresponding to Ihde's second phenomenology.

For developing his procedure, Ferrara listened 13 times to Edgar Varèse's *Poème électronique* (1958) and described his experience after each listening. His descriptions include feeling, movement, gesture, space, temporal relations and tactile qualities. Ferrara's goals were to apply phenomenological description as a guide for other types of musical analysis, and to uncover potential meaning in the music, following Heidegger's claim (1962) that the meaning of phenomenological description lies in interpretation.

The experimental listening project

On the basis of the music phenomenology proposed by Don Ihde, Thomas Clifton and Lawrence Ferrara, the present authors EC and LCB have developed a method of experimental listening. 1) The method adopts Clifton's proposition that time, space, motion and feeling are basic constituents of the musical experience. 2) It develops Ferrara's procedure of repeated listening with variable focus. 3) In particular, our method benefits from Ihde's clarification of the descriptive first phenomenology and the interpretative second phenomenology, and his strategy of experimental phenomenology.

Don Ihde's book *Listening and Voice* (1976) introduced methodical approaches to auditory phenomenology, but provided no exercises or examples. His following book *Experimental Phenomenology* (1977) deals with visual phenomenology, including practical exercises and the following rules for practicing phenomenology:

Attend to the phenomena as they appear and how they show themselves.
Describe, don't explain.
Think of all phenomena as equally real.
Perform phenomenological variations, applying different ways of focusing on the object.
Reflect on the process that produces the experience.

Our experimental listening project integrated approaches from Don Ihde's two books, while exploring the applications of phenomenological variations in music listening, according to the rules proposed by Ihde.

As the objects of our investigations, we chose three very different musical works, Bela Bartok's Hungarian Sketch no. 1 for orchestra, An Evening in the Village (1931), Coleman Hawkins' jazz saxophone solo Body and Soul (1939), and Anton Webern's Bagatelle for String Quartet op. 9, no. 1 (1913). We selected these pieces because of the richness of their musical qualities which permit a multitude of observations. Furthermore, we considered it fruitful to elaborate on Clifton's description of the Webern piece (1976)

In order to develop the method, we performed sessions of phenomenological variations, consisting of listening to a musical piece an unlimited number of times, guided by deliberately varied focusing, and clarified by intersubjective inquiry. The approaches included open listening, descriptive music-focused listening, and interpretative hermeneutical listening.

In open listening, we listened to the music without any particular focus or cue. Music-focused listening was directed by specific questions or tasks which might focus on *temporal features* such as speed, rhythm and pauses, *spatial features* such as registers and transparence, and *temporal-spatial features* such as movement, direction, glissando and expansion. Hermeneutical listening was guided by cues for interpretation, for example the title of the music, the suggestion of a context, or a particular question.

Before a listening session, EC listened to the musical piece a number of times in order to collect first-hand observations and plan a preliminary succession of questions and tasks. In a session, we listened approximately 25 times, every time notating observations, reflections and comments.

The outcome was a progressive appropriation of the music, a cumulative description of the music in its entirety and details, reflections on the variable process of listening, and a large collection of specific questions and tasks for future investigations. Detailed reports of the listening sessions are available in the publication by Christensen (2012).

Experimental listening of Study no. 40a

The Wergo CD recordings of Conlon Nancarrow's Studies for player piano document the abundant variety of his production, encompassing comparatively simple structures such as metrical patterns, two-part canons or studies in blues or jazz style, as well as complex textures of rhythm, polyphony and sound masses. For the recording, all studies were played on one of Nancarrow's two Ampico player pianos, the one furnished with leather strips on the hammers, producing a sound that is clear and distinct, but not extremely harsh for the listener's ear (Amirkhanian 1990)

After listening to the 62 recorded studies, we chose one of the complex studies, the Study 40a, which provides rich material for phenomenological investigation. This study displays the composer's inventiveness and consciousness of musical form, as well as the prominent qualities of the player piano, including precise control of rhythm, rich sonorities in contrasting registers, distinct attacks and extreme rapidity. Study 40a is fascinating, challenging, and entertaining.

Our descriptions do not aim at providing a complete map of Nancarrow's study. Rather, we report a journey into a musical work. The report includes musicological descriptions, hermeneutical interpretations, and associations to the lifeworld of the observers. We propose that our observations contribute to shedding light on the elements, structures, qualities and the impact of the work.

As a preparation, EC listened approximately 15 times in order to collect first-hand observations, possible questions and listening tasks. Furthermore, he undertook a division of the piece into shorter sections in order to facilitate retention in working memory and detailed description of musical features. Subsequently, LCB and EC listened multiple times to the whole piece and the separate sections. The preparation engendered the following observations and questions:

General observations: Great activity and variety. Intense and overwhelming music. The total musical flow appears labyrinthine and unpredictable. Abrupt start, long sustained tones, glissandi, rhythms, gestures, harmonies. Ostinato-like patterns in bass. Fast tempi. Frenetic movements in high register.

Music-focused questions: Listen for registers, timbres, rhythm patterns, movement shapes. Simplicity versus complexity. Transparence versus density. Continuity versus interruptions. Simultaneity of deep and high registers. Temporary dominance of one register.

Hermeneutical questions: Does the music evoke associations to events, waves, interactions, particular kinds of movement, living beings, voices, dialogues?

Division into sections in order to facilitate the observation and description of musical elements:
Possible criteria for division: Single events versus simultaneous events. Predominant registers, in particular bass and treble. Speed. Characteristic movements, rhythm patterns and gestures. Ostinato-like patterns in bass. Upon listening multiple times, EC proposed the following divisions:

Introduction:	0'00-0'28	Single events, short pauses. End: specific rhythm in bass.
Section 1:	0'28-1'36	Change from single events to simultaneous events.
Section 2:	1'36-2'17	Ostinato-like patterns in bass. End: bass register solo.
Section 3:	2'17-3'09	Begins with expansion of register. End: rapid high register solo.
Section 4:	3'09-3'52	Begins with prominent glissandi upwards and downwards.
Section 5:	3'52-4'30	Begins with prominent intensification of rapid rhythms.

These sections display salient differences in musical features. However, the musical flow is mainly continuous, and it is possible to select other points of division.

First day of experimental listening

Observations and descriptions by LCB, if not otherwise indicated
Questions by EC, answers by LCB, if not otherwise indicated

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middle register which sound like fragments of a ragtime that does not have room to unfold. A brief feeling of ragtime harmony.

Hermeneutical: Fat insects with metal feet dancing on a transparent glass roof, the depth below is visible. Surprise: a clown pops up.

Where do you hear beautiful passages? - I like the pauses very much. And I like several places where deep sounds are sustained. They simply exist, remain as deep anchors. Moreover, glissandi unfolding in significantly beautiful chords.

EC: The final listening was a golden moment for me, changing my view of this section. A previous impression of a lengthy drawn-out disconnection yielded to a golden presence of mellow sounds.

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Second day of experimental listening

The whole piece: Initial open listening

The musical shapes stand out more clearly now. I begin to feel at home in this music. I realize that it is a composition, not merely sounds swirling along. It is obvious that the music presents ideas that are well balanced and amusing. I hear interesting expansions of the middle register towards high and low registers. Brief melodies emerge. The music seems to move in patterns of fixed points defined by salient tones. The movements of glissandi up and down appear to be systematic.

Section three (2'17-3'09). Begins with expansion of register. End: rapid high register solo.
Listening nine times

Music-focused: A great variety and diversity, difficult to retain. Teasing rhythms, fleeting intervals and chords. Salient minor third in the middle register. Insisting bass which may display its own rhythm or meter. Accelerando, melody in stroboscopic light. Ragtime at the top.

What happens in the different registers? - Expansion from the very start upwards and downwards, followed by a short festive melody three times, like a celebration. Immediately afterwards, a multitude of glissando fans begin going up and down. Some fans end in a single tone, others in chords, like flowers blooming. Fans expand to high and low registers. Most fans are short, a few downward fans are longer.

Final listening, open: The music sounds like a ragtime which is continuously disturbed by machine-like structures, like a CD jumping. In the last half, a prominent feeling of tonal melody and ragtime appears. The music moves towards the high register, and at last the bass gives up. The staccato ending of this section sounds like a hybrid between stinging mosquitoes and a sewing machine.
EC: Or like rapid hummingbirds. LCB: No, hummingbirds do not hack or sting.

Section four (3'09-3'52). Begins with prominent glissandi upwards and downwards. **Listening eight times.**

Music-focused and hermeneutical: Begins with a fast string of pearls upwards, further strings of pearls, accompanied by rapid tones in high register. Polyrhythm with room for walking bass. Staccato in different registers. Incredibly rapid repeated tones. Multiple changes of harmony.

How do you experience the shift when the walking bass begins? - Walking bass and high-register accompaniment correspond. They both crawl towards the middle register, share and exchange colors. The top layer is insisting, hectic, clear and luminous. The walking bass evokes enthusiasm in me, it is friendly and welcome. *EC: I agree that the walking bass evokes a pleasant feeling.*

How is the overall development and direction in this section? - A long expansion to high and low registers towards the end. Pleasant feeling of coordination between the voices.

Final listening, open: LCB: Lean back and fasten your safety belts! *EC: Flickering sounds, incredible events.*

Afterthought, EC: LCB has now described different glissando movements in four ways: as flowers unfolding, as fans, as arrows, and as strings of pearls.

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Afterthoughts

The progress of our observations shows a gradual transition from an initial experience of overwhelming unpredictability to a final familiarity with the music's variety of details and the overall course of events, relationships and developments. Our report illustrates that cumulative listening implies learning processes. The continuous input and multifarious retention in working memory results in retention in long-time memory. In addition, increasing familiarity can lead to enhanced appreciation of the music. A side effect of long-time retention is the risk that the music may become an earworm that pops up spontaneously, disturbing everyday consciousness.

We consider it appropriate to draw attention to a different approach to Nancarrow's music, the comprehensive book published by Kyle Gann (1995). In this book, Gann presents a mathematical explanation of the musical structure of Study no. 40a, as well as a meticulous score analysis, more detailed than our phenomenological approach.[2] Intriguingly, Kyle Gann points out that this study is a tempo canon, where different voices play in different tempi.

In Study 40a, the tempo ratio between the two voices is particularly complex, defined mathematically as the ratio between two irrational numbers. We did not perceive the canon, but the intricate tempo structure provides a possible explanation of our phenomenological experience of complexity and unpredictability.

Kyle Gann points out a crucial feature of a tempo canon, called the *convergence point,* where the voices catch up with each other, coinciding their timing for a brief moment. Study 40a ends with a convergence point, so that the feeling of climax comes at the end of the music. This is probably the structural background for our observation that the integration of different elements leads to the final cadence. LCB has named this process "The final break-through of ragtime".

Study 40a is complex, yet Nancarrow planned further complexity. He indicated that the study can be played on two pianos in counterpoint with itself. The second piano begins approximately 15 seconds later than the first piano. On the Wergo CD, the two-piano version is recorded as Study 40b. It is truly entertaining.

In the descriptions of Study 40a, we have related our experience of musical beauty and pleasure to long sustained sounds, sonorous chords and patterns of sound and rhythm in low register. Moreover, LCB has pointed out the beauty of brief pauses in the beginning of the piece. We both seem to find pleasure in musical grounding and similarity with human musical expression, as a refuge from the sharp attacks and superhuman speed in the high registers. However, we also enjoy a short ride in a fast machine, with fastened safety belts.

It is a striking feature of the listening process that the music may suddenly change its appearance and show another side of its nature. This happened when EC in section one unexpectedly perceived "a golden presence of mellow sounds", and when LCB in the final listening of section two reported that "Now I see everything from below. I am the bass. I never experienced this before." Such significant moments are emotional rewards for prolonged attention-demanding repetitive listening.

We are tempted to hear this piece again and ask further questions. The phenomenological investigation is a perpetual beginning that uncovers the richness of sensory experience and provokes the sense of wonder. We invite interested listeners to undertake their own investigation and compare their observations with our report.

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[2] Gann, K. (1995), pp. 173-174 and 200-207.

Limitations

The phenomenological approach can engender a multitude of observations, but it does not guarantee precise descriptions of musical parameters. In particular, our descriptions merely hint at clarifying the music's underlying tonalities and harmonic progressions. We are aware that studies of the notated scores are necessary in order to uncover the intrinsic musical details and relationships of Nancarrow's music, as demonstrated by Kyle Gann (1995). Moreover, Study 40a is merely one example of the composer's comprehensive output. The recordings of the 62 Studies display a multitude of musical structures, which offer ample material for further phenomenological inquiry. We hope that the present article will encourage future investigations of Nancarrow's Studies.

Recordings

Bela Bartok: An Evening in the Village. Hungarian Sketches for Orchestra no. 1. Duration 2'47.
Chicago Symphony Orchestra conducted by Pierre Boulez. DG 445 825-2

Coleman Hawkins, tenor saxophone with band: Body and Soul, 11 October 1939. Duration 3'00. RCA Bluebird ND 85717.

Conlon Nancarrow: Studies for player piano. Wergo CD WER 6908.

Anton Webern: Bagatelle for string quartet Op. 9 no. 1. Duration 0'30.
Emerson String Quartet. DG 445 828-2

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